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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/582,874	07/06/2000	TOSHIHIDE HAMAGUCHI	000831	3201

23850 7590 07/06/2004

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EXAMINER

AU, SCOTT D

ART UNIT	PAPER NUMBER
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2635

DATE MAILED: 07/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary

Application No.

09/582,874

Applicant(s)

HAMAGUCHI ET AL.

Examiner

Scott Au

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 April 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

This communication is in response to applicant's response to an Amendment B, which is filed April 7, 2004.

An amendment B to the claims 1-17 have been entered and made of record in the Application of Hamaguchi et al. for an "Alerting device and radio communication device having the alerting device" filed April 6, 2000.

Claims 1-17 are pending.

Response to Arguments

Applicant's amendments and argument to the rejected claims are insufficient to distinguish the claimed invention from the cited prior art to overcome the rejection of said claims under 35 U.S.C 102(a) and 35 U.S.C 103(a) as discussed below.

Applicant's amendment and argument with respect to the pending claims 1-17, filed on April 7, 2004, have been fully considered but they are not persuasive for at least the following reasons.

On page 11, second paragraph, Applicant's argument with respect to the invention of Mittel et al. that "fail to disclose the limitations recited in claims 1, 10 and 11 as amended", is not persuasive.

Mittel et al. disclose an electrical block diagram of a mode tracking transducer driver 100 in accordance with the present invention. The mode tracking transducer driver 100 includes a voltage controlled oscillator 104 (hereinafter referred to as a VCO), a transducer driver 106, a phase comparator 108, a D flip-flop 110, a mode

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detector 112, and a low pass filter 114. The VCO 104 operates in a manner well known to one of ordinary skill in the art, whereby a frequency control signal generated at the output of the low pass filter 114 controls the generation of a variable frequency output signal which varies over a predetermined frequency range which by way of example is from 40 Hertz to 120 Hertz when utilized to drive a tactile alerting device, such as the non-linear electromagnetic transducer 102. For a tactile alerting device, the optimum frequency of operation is from 90 Hertz to 100 Hertz. A control input 116 is provided which is used to enable operation of the VCO 104 when an operation of the non-linear electromagnetic transducer 102 (hereinafter referred to as a transducer) is required, such as when the transducer 102 is utilized to generate a tactile alert when utilized in an electronic device, such as a pager or portable cellular telephone. The variable frequency output of the VCO 104 is coupled to a clock input of the D flip-flop 110 and to a first input of the phase comparator 108. The D flip-flop 110 operates as a frequency divider providing a predetermined division value of two (col. 3 lines 9-34). Examiner's interpretation in view of Mittel et al. that the frequency is vary over a predetermined range of 40-120 Hertz and resonance frequency from 90-100 Hertz in order to drive the tactile alerting device. Therefore, the new limitation "wherein the drive signal has a frequency which varies within a range between a low frequency limit which less than the resonance frequency of the vibrator and a high frequency limit which is greater than said resonance frequency" can not overcome Mittel et al. The Examiner maintains that the references cited and applied in the last office actions for the rejection of the claims are maintained in this office action.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

Claims 1-3, 8 and 10 are rejected under 35 U.S.C. 102(e) as being anticipated by Mittel et al. (US# 5,828,295).

Referring to claim 1, Mittel et al. disclose a notifying device (100) (i.e. a mode tracking transducer driver) comprising a vibrator (102) (i.e. electromagnetic transducer to generate a tactile alert) to be resonated by a drive signal fed thereto, and a signal preparing circuit (106) (i.e. a transducer driver) for feeding the drive signal to the vibrator (102) (i.e. electromagnetic transducer to generate a tactile alert) at the time of notifying operation, wherein the drive signal has a frequency which varies within range between a low frequency limit which is less than the resonance frequency of the vibrator and a high frequency limit which is greater than said resonance frequency and which matches the resonance frequency during the variation (col. 3 lines 9-34; see Figure 1).

Referring to claim 10, Mittel et al. disclose a wireless communications system comprising a notifying device (100) (i.e. a mode tracking transducer driver) for notifying

the user of incoming calls, the notifying device (100) (i.e. a mode tracking transducer driver) comprising a vibrator (102) (i.e. electromagnetic transducer to generate a tactile alert) to be resonated by a drive signal fed thereto, and a signal preparing circuit (106) (i.e. a transducer driver) for feeding the drive signal to the vibrator (102) (i.e. electromagnetic transducer to generate a tactile alert) at the time of notifying operation, wherein the signal drive signal has a frequency which varies within a range between a low frequency limit which is less than the resonance frequency of the vibrator and a high frequency limit which is greater than said resonance frequency and which matches the resonance frequency during the variation (col. 3 lines 9-34; see Figure 1).

Referring to claim 2, Mittel et al. disclose a notifying device according to claim 1 wherein the variation of the frequency of the drive signal corresponds to a variation in the resonance frequency of the vibrator due to tolerances of specifications on which the resonance frequency is dependent (col. 3 lines 9-34).

Referring to claim 3, Mittel et al. disclose a notifying device according to claims 1 and 11 wherein the resonance frequency of the vibrator is a low frequency of p to hundreds of hertz, and the vibration of the vibrator has at the resonance frequency an amplitude generally perceivable by t he human body (col. 3 lines 9-34).

Referring to claim 8, Mittel et al. disclose a notifying device according to claim 1 wherein the frequency of the drive signal gradually increases or gradually decreases stepwise within the definite range (col. 3 lines 9-34).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mittel et al. (US# 5,828,295) as applied to claim 1 above, and further in view of Kagan (US# 3,623,064).

Referring to claims 4-6, Mittel et al. disclose a notifying device of claim 1. However, Mittel et al. did not explicitly disclose wherein the drive signal has an alternating waveform of rectangular waves or sine waves having a frequency periodically varying at 0.5 to 10 Hz, 1.37 to 2.98 Hz or at 2.18 Hz.

In the same field of endeavor of electric vibrator, Kagan teaches wherein the drive signal has an alternating waveform of rectangular waves or sine waves having a frequency periodically varying at a frequency in a subaudible range of 5 Hz (col. 1 lines 21-30; see Figure 3) in order to activate the vibrator means.

Therefore, it would have been obvious person as a matter of design expedient through routine experimentation to a person of ordinary skill in the art at the time of the invention was made to include wherein the drive signal has an alternating waveform of rectangular waves or sine waves having a frequency periodically varying at 0.5 to 10 Hz, 1.37 to 2.98 Hz or at 2.18 Hz of system disclosed by Kagan into system of Mittel et al. with the motivation for doing so would allow the range of frequency of the drive signal varied within range that is suitable and work best for their system in achieving optimal results.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mittel et al. (US# 5,828,295) as applied to claim 1 above, and further in view of Ditthardt (US# 3,628,150).

Referring to claim 7, Mittel et al. disclose a notifying device of claim 1. However, Mittel et al. did not explicitly disclose wherein the frequency of the drive signal varies in the form of triangular waves, sine waves or sawtooth waves having the definite range as the amplitude thereof.

In the same field of endeavor of alerting signal in a paging communication system, Ditthardt teaches wherein the frequency of the drive signal varies in the form of triangular waves, sine waves or sawtooth waves having the definite range as the amplitude thereof (col. 4 lines 6-25; see Figure 2) in order to have a calling-code signal

to a substantially noise-free continuous-wave signal having different amplitude levels reflecting the code represented by the detected signal.

Therefore, it would have been obvious to a of ordinary skill in the art at the time of the invention was made to include wherein the frequency of the drive signal varies in the form of triangular waves, sine waves or sawtooth waves having the definite range as the amplitude thereof of system disclosed by Ditthardt into system of Mittel et al. with the motivation for doing so would allow the frequency varied in wave form with definite range.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mittel et al. (US# 5,828,295) as applied to claim 1 above, and further in view of Saiki et al. (US# 6,208,237).

Referring to claim 9, Mittel et al. disclose a notifying device of claim 1. However, Mittel et al. did not explicitly disclose wherein the vibrator comprises a casing, a diaphragm having a fixed end on an inner peripheral wall of the casing, a magnet attached to a free end of the diaphragm, and a coil disposed as opposed to the magnet, and the drive signal is fed to the coil.

In the same field of endeavor of electro-mechanical and acoustic transducer, Saiki et al. teach wherein the vibrator comprises a casing, a diaphragm having a fixed end on an inner peripheral wall of the casing, a magnet attached to a free end of the diaphragm, and a coil disposed as opposed to the magnet, and the drive signal is fed to

the coil (col. 1 line 60 to col. 2 line 15 and col. 6 lines 41-64) in order to have a strong vibration and sound.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention was made to include wherein the vibrator comprises a casing, a diaphragm having a fixed end on an inner peripheral wall of the casing, a magnet attached to a free end of the diaphragm, and a coil disposed as opposed to the magnet, and the drive signal is fed to the coil of system disclosed by Saiki et al. into system of Mittel et al. with the motivation for doing so would allow a notifying device consisted of a vibrator.

Claims 11-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mittel et al. (US# 5,828,295) in view of Muto et al. (US 5,754,096).

Referring to claim 11, Mittel et al. disclose a wireless communication system having incorporated therein a notifying device (100) (i.e. a mode tracking transducer driver) for performing different kinds of notifying operations including notification of incoming calls, the notifying device comprising a vibrator (102) (i.e. electromagnetic transducer to generate a tactile alert) to be resonated by a drive signal fed thereto, and a drive signal feed circuit (i.e. a circuit of notifying device 100 generates signal to the electromagnetic transducer 102) for feeding the drive signal to the vibrator (102) (i.e. electromagnetic transducer to generate a tactile alert), which the drive signal feed circuit comprises:

Command signal preparing means (104) (i.e. voltage control oscillator) for preparing notification command signals (502) (i.e. a transducer drive signal) which are different for different contents of notification in conformity with the content, and drive signal preparing means (106) (i.e. a transducer driver) operative in response to the notification command signal to prepare a drive signal which varies in frequency within a range between a low frequency limit which is less than the resonance frequency of the vibrator and a high frequency limit which is greater than said resonance frequency (col. 2 lines 31-48 and col. 3 line 9 to col. 4 line 11; see Figure 1). However, Mittel et al. did not explicitly disclose a drive signal which differs in the state of variation for the different notification command signals and to feed the drive signal to the vibrator.

In the same field of endeavor of electronic apparatus with vibration informing function, Muto et al. teach drive signal which differs in the state of variation for the different notification command signals and to feed the drive signal to the vibrator (col. 2 lines 8-32, col. 4 lines 26-67 and col. 6 lines 49-64; see Figures 1-2, 4-11) to generate different vibration patterns in order to know different incoming calls.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to include a drive signal which differs in the state of variation for the different notification command signals and to feed the drive signal to the vibrator of system disclosed by Muto et al. into system of Mittel et al. with the motivation for doing so would allow the vibrator to output different notifications.

Referring to claim 12, Mittel et al. in view of Muto et al. disclose the wireless communication system of claim 11, Mittel et al. disclose wherein the drive signal prepared by the drive signal preparing means (106) (i.e. a transducer driver) varies in frequency continuously in conformity with the notification command signal or intermittently at a specified period in conformity with the notification command signal (col. 2 lines 38-47 and col. 3 line 9 to col. 4 line 11).

Referring to claim 13, Mittel et al. in view of Muto et al. disclose the wireless communication system of claim 11, Mittel et al. disclose wherein the drive signal prepared by the drive signal preparing means (106) (i.e. a transducer driver) varies in frequency at a specified period in conformity with the notification command signal (col. 2 lines 38-47 and col. 3 line 9 to col. 4 line 11).

Referring to claim 14, Mittel et al. in view of Muto et al. disclose the wireless communication system of claim 11, Mittel et al. disclose wherein the variation of frequency of the drive signal prepared by the drive signal preparing means (106) (i.e. a transducer driver) corresponds to a variation in the resonance frequency of the vibrator (102) (i.e. electromagnetic transducer to generate a tactile alert) due to tolerances for specifications which govern the resonance frequency (col. 2 lines 38-47 and col. 3 line 9 to col. 4 line 11).

Referring to claim 15, Mittel et al. in view of Muto et al. disclose a notifying device in claim 1, claim 15 equivalent to that of claim 3 addressed above, incorporated herein. Therefore, claim 15 is rejected for same reasons given with respected to claim 3.

Referring to claim 16, Mittel et al. in view of Muto et al. disclose the wireless communication system of claim 11, Mittel et al. disclose wherein the command signal preparing means prepares an incoming call notifying command signal for notifying the user of an incoming call, a caller notifying command signal for distinguishing callers, and /or a mode notifying command signal for notifying the user of an operation mode of the system (col. 2 lines 26-47 and col. 3 lines 9-34).

Referring to claim 17, Mittel et al. in view of Muto et al. disclose a notifying device in claim 1, claim 17 equivalent to that of claim 9 addressed above, incorporated herein. Therefore, claim 17 is rejected for same reasons given with respected to claim 9.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Scott Au whose telephone number is (703) 305-4680. The examiner can normally be reached on Mon-Fri, 8:30AM – 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Horabik can be reached at (703) 305-4704. The fax phone numbers for the organization where this application or proceeding is assigned are (703)-872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)-305-3900.

Scott Au

MICHAEL HORABIK
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600

